DEC AF01B A/D Converter
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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-UA-AF01B-A-0			A-D CONVERSION SYS
A-PL-AF01B-A-0	A		A-D CONVERSION SYS
D-AD-7005373-0-0		1	WIRED ASSY CASTING
A-PL-7005373-0-0		1	WIRED ASSY CASTING
D-MU-AF01B-0-1	E	1	MODULE UTILIZATION AF01B
A-PL-AF01B-0-1	E	2	MODULE UTILIZATION AF01B
A-PL-AH02-0-2		1	OPTION KIT PARTS LIST
D-BS-AF01B-0-2	D	1	INTERFACE LOGIC
D-BS-AMX1-0-2	A	1	MULTIPLEX CONT. 64 CHANNEL
D-BS-AMX1-0-3	A	1	ANALOG MULTIPLEXER
D-BS-ADC1-0-2	C	2	FLIP-CHIP A-D CONVERTER
D-IC-CMX1-0-5	A	2	POWER WIRING CMX1
D-IC-AF01B-0-3	A	1	INTERFACE CABLES
K-WL-CMXJ-0-3	B		A-D CONVERTER WIRE-LIST
A-CP-CMX1-0-2	C	3	EXTERNAL COMPONENT LIST
A-CL-AMX1-0-4	A	8	ANALOG INPUT CABLE
A-SP-AF01B-A-2	B	6	TEST PROCEDURE
A-SP-AF01A-0-4	A	8	A/D CONVERTER & MULTIPLEXER AF01A & AF01B
A-SP-AF01A-0-9		2	ACCEPTANCE PROCEDURE

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ISSUED AUG 21 1967

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	6/67	151	R.G.
B	7/67	161	R.G.
C	10/67	188	R.G.
D	10/67	189	R.G.
E	10/67	195	R.G.
F	11/67	203	R.G.
H	12/67	213	R.G.
J	1/68	224	R.A.
K	1/68	190	R.G.
L	3/68	211	D.B.
M	3/68	68	M.M.
N	3/68	216	R.G.

DEC FORM NO. DRA 103

DRN. J. LUBIN	DATE 3/2/67	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. [illegible]	DATE 3/21/67	
ENG. [illegible]	DATE 5-5-67	TITLE A-D CONVERSION SYSTEM AF01B-A
PROJ. ENG. [illegible]	DATE 5-5-67	
PROG. [illegible]	DATE 5-5-67	
FIRST USED ON D-UA-AF01B-A-0		SIZE A; CODE ML; NUMBER AF01B-A-0 #145; REV. N
SCALE		
SHEET 1 OF 1		DIST.

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PARTS LIST — **DIGITAL EQUIPMENT CORPORATION** MAYNARD, MASSACHUSETTS

PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.
1	D-MD-7405923-0-0	1	BEZEL CASTING REWORK	7405923-0-0
2		4	PLASTIC RIVET #201-121041-01-0101 NYLON FASTEX CORP.	
3	D-AD-7005443-0-0	1	POWER PLATE ASSY	7005443-0-0
4		1 PAIR	CHASSIS TRACK #CTD-120 CHASSIS TRACK	
5	C-MD-7406016-0-0	1	PLATE FAN COVER	7406016-0-0
6		4	SCR PHL TRUSS HD #10-32 X 3/8 SST	
7	C-IA-7405894-1-0	1	REAR PANEL SUPPORT BRKT (R.H.)	7405894-0-0
8		2	SCR PHL HD PAN #6-32 X 1/4 LG SST	
9		18	SCR PHL TRUSS HD #10-32 X 7/16 LG SST	
10		2	SCR PHL HD PAN #6-32 X 3/4 LG SST	
11	C-IA-7405556-4-0	6	W021 TO W011 CABLE	7405556-4-0
12		1	PLASTIC CLAMP #CPL-1953-2B COMMERCIAL PLASTICS	
13	D-IA-7405927-0-0	1	REAR PANEL	7405927-0-0
14		4	SPACER 1/4 OD X 5/32 ID X 1/8 LG	
15		4	SCR PHL TRUSS HD #10-32 X 3/4 SST	
16		4	NYLON WASHER 7/16 OD X 1/4 ID X 1/16 THK	

REVISIONS

CHANGE NO.	DATE	ENG.
A-3104 CHG'D DWG #	10/17 /67	RR
OF ITEM #38 B-3291 R03	1/26/68	RP
ADDED PT #49		RP

MADE BY D. REILLY	DATE 6/19/67	TITLE A-D CONVERTER & MULT. AF01B-A (PDP-9)	SIZE A / CODE PL / NUMBER AF01B-A-0 / REV. B
CHECKED R.E. PHIPPS	DATE 6/22/67	FOR G	ASSY. NO. E-UA-AF01B-A-0 / SHEET 1 OF 3
ENG. R. Williams	DATE 8-14-67		

DEC FORM NO. DRA 109

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PARTS LIST — **DIGITAL EQUIPMENT CORPORATION** MAYNARD, MASSACHUSETTS — **REVISIONS**

PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.	CHANGE NO.	DATE	ENG.
17		14	WASHER EXT TOOTH #10 SST				
18		1	2 POLE MOTOR PLUG #160-5 AMPHENOL				
19	D-IA-7406026-0-0	1	ANALOG INPUT CABLE ASSY	7406026-0-0			
20		22	SCR PHL PAN HD #6-32 X 3/8 SST				
21		18	KEP'S HEX NUT #6-32 THD				
22	E-AD-7005471-0-0	1	CONTROL PANEL ASSY	7005471-0-0			
23	A-MD-7405925-0-0	2	BRKT SUPPORT #1 (BENELEX)	7405925-0-0			
24		3	SCR SOC HD CAP #10-32 X 9/16 SST				
25		5	WASH INT TOOTH #10				
26		2	SCR PHL TRUSS HD #10-32 X 5/8 LG SST				
27		2	SOLDERLESS CONN #31889 AMP INC.				
28		A/R	#18 AWG STRD TEF (GRN)	91-07465			
29		A/R	#18 AWG STRD TEF TWP RED/WHT	91-07531			
30	C-IA-7405894-2-0	1	REAR PANEL SUPPORT BRKT (L.H.)	7405894-0-0			
31		10	WASH INT TOOTH #6 SST				
32		A/R	#18 AWG STRD TEF (RED)	91-07462			

Not for RICM use

Not for RICM use

MADE BY D. REILLY	DATE 6/19/67	TITLE A-D CONVERTER & MULT. AF01B-A (PDP-9)	SIZE A	CODE PL	NUMBER AF01B-A-0	REV. B
CHECKED R.E. PHIPPS	DATE 6/22/67	FOR G	ASSY. NO. E-UA-AF01B-A-0		SHEET 2 OF 4	
ENG. R Williams	DATE 8-14-67					

DEC FORM NO. DRA 109

Not for RICM use

Strictly not for RICM use

PARTS LIST — **DIGITAL EQUIPMENT CORPORATION** MAYNARD, MASSACHUSETTS — **REVISIONS**

PART NO.	DRWG. NO.	NO REQ	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.	CHANGE NO.	DATE	ENG.
33		15'	SOLDERLESS CONN #42025-1 AMP INC.				
34		4	SCR PHL HD PAN #10-32 x 3/8 SST				
35	A-MD-7406050-0-0	2	REAR MTG BLOCK	7406050-0-0			
36		1	120VAC INPUT POWER SUPPLY [illegible]1520-.400 [illegible]	12-03186-2			
37		1	SCR PHL HD PAN #8-32 x 3/16 LG SST				
38	C-SC-3405316-0-0	2	BAR KNOB	3405316			
39		2	SCR SCH SET #6-32 x 3/8 SST				
40	D-IA-7405904-0-0	1	PANEL, CONTROL	7405904-0-0			
41		A/R	SCOTCH MOUNT TAPE #4032 1/32 THK				
42		A/R	#22 AWG STRD TEF (GRN)	91-07455			
43		A/R	#22 AWG STRD TEF (BRN)	91-07451			
44		A/R	#22 AWG STRD TEF (ORN)	91-07453			
45		A/R	#22 AWG STRD TEF (BLK)	91-07450			
46		A/R	#22 AWG STRD TEF (BLU)	91-07456			
47		A/R	#22 AWG STRD TEF (RED)	91-07452			
48	D-AD-7005373-0-0	1	WIRED ASSY, CASTING	7005373-0-0			

MADE BY D. REILLY	DATE 6/19/67	TITLE A-D CONVERTER & MULT. AF01B-A (PDP-9)	SIZE A	CODE PL	NUMBER AF01B-A-0	REV. B
CHECKED R.E. PHIPPS	DATE 6/22/67	FOR G	ASSY. NO. E-UA-AF01B-A-0		SHEET 3 OF 9	
ENG. R Williams	DATE 8-14-67					

DEC FORM NO. DRA 109

PARTS LIST

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

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PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.
*49	A-DC-7406574-0-0	1	DECAL (50 HZ)	7406574
*36		1	POWER SUPPLY 15/20 —.400 240VAC INPUT	12-03186-4
*	USED ON 50 HZ MACH ONLY.			

REVISIONS		
CHANGE NO.	DATE	ENG.

MADE BY D. REILLY	DATE 6/19/67	TITLE A-D CONVERTER & MULTI AF01B-A (PDP-9)	SIZE A	CODE PL	NUMBER AF01B-A-0	REV. B
CHECKED R.E. PHIPPS	DATE 6/22/67	FOR	ASSY. NO. E-UA-AF01B-A-0		SHEET 4 OF 4	
ENG. R. WILLIAMS	DATE 6/14/67					
DEC FORM NO. DRA-109						

Not for RICM use

Not for RICM use

NOTES:

1. FOR DRAWING INDEX LIST REFER TO DWG NO. D-DI-AFOIB-A-1
2. APPLY ITEM #41 TO BOTH ENDS TOP & BOTTOM OF ITEM #22 (CONTROL PANEL ASSY) ATTACH ITEM #40 (PANEL CONTROL) & THEN ATTACH ITEM #39 (BEZEL CASTING)
3. FOR ADDITIONAL INFORMATION ON ASSEMBLING ITEM'S #38, 39, 40 & 41 REFER TO DWG NO. E-AD-7005471-0-0 (CONTROL PANEL ASSY)
4. LABEL ITEM #49 DECAL USED ON 240 V.A.C. 50 HZ. ONLY (APPLY OVER EXISTING LABEL.)

19 3/4 REF.

8 11/16 REF.

19 REF.

SEE NOTE #2

TRANSFORMER H701

STD DEC CAB. FRAME REF ONLY

SECTION B-B

A-D CONVERTER

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EQUIPMENT CORPORATION

A-D CONVERTER & MULT. AFOIB-A (PDP 9)

UA AFOIB-A-0

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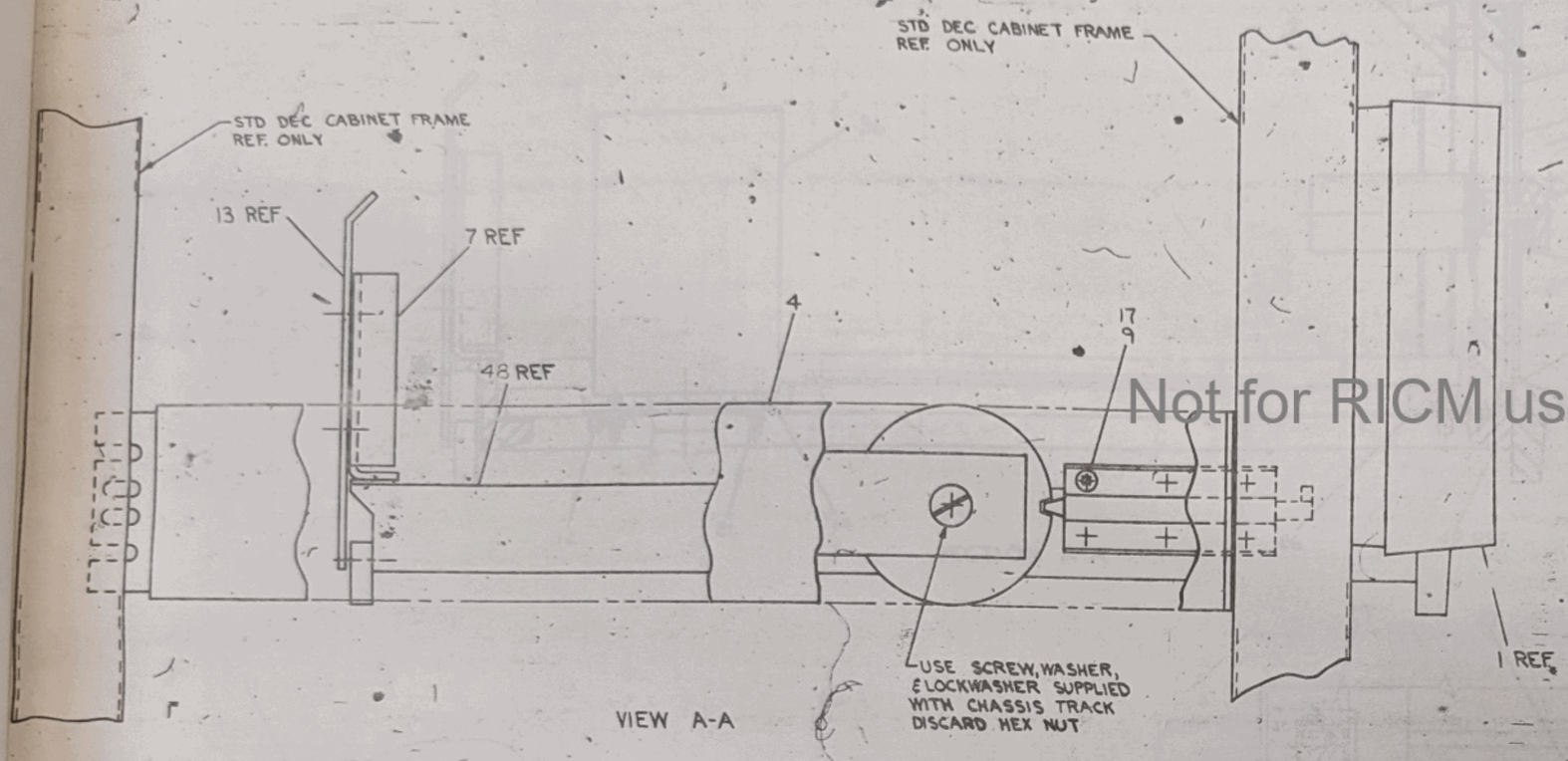
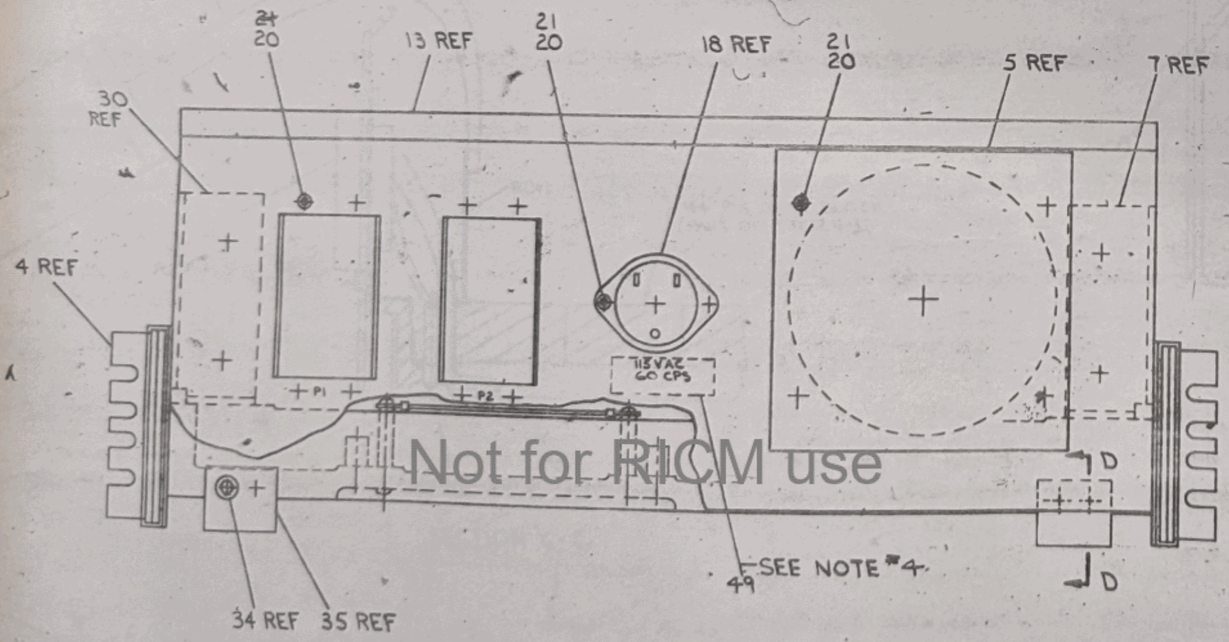
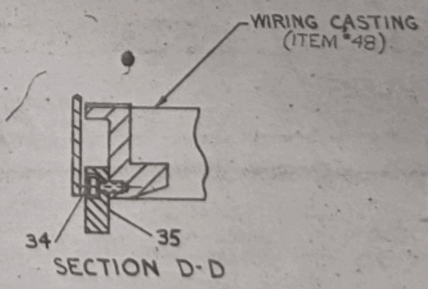






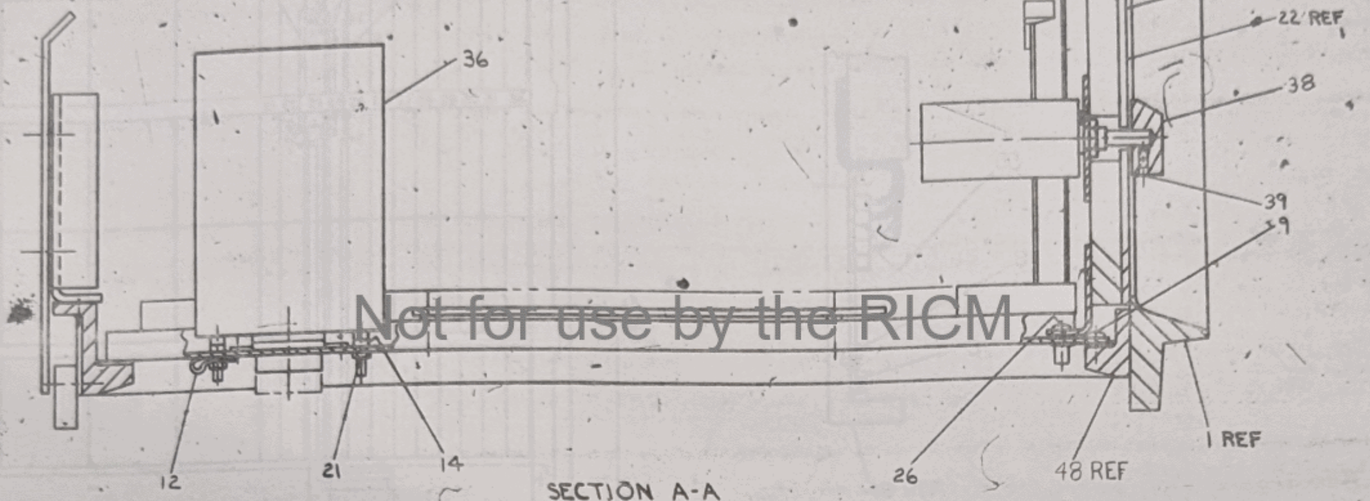
QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

EQUIPMENT CORPORATION

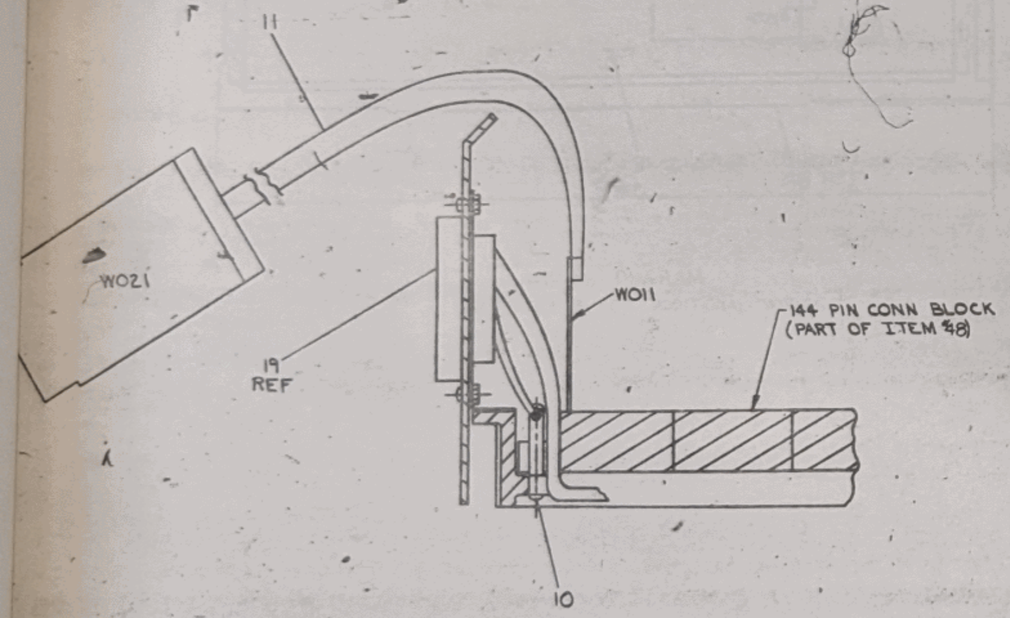
TITLE: A-D CONVERTER & MULT. AFOIB-A (PDP 9)

SIZE: B | SCALE: 1/1 | DRAWING: AFOIB-A-0 | REV: B

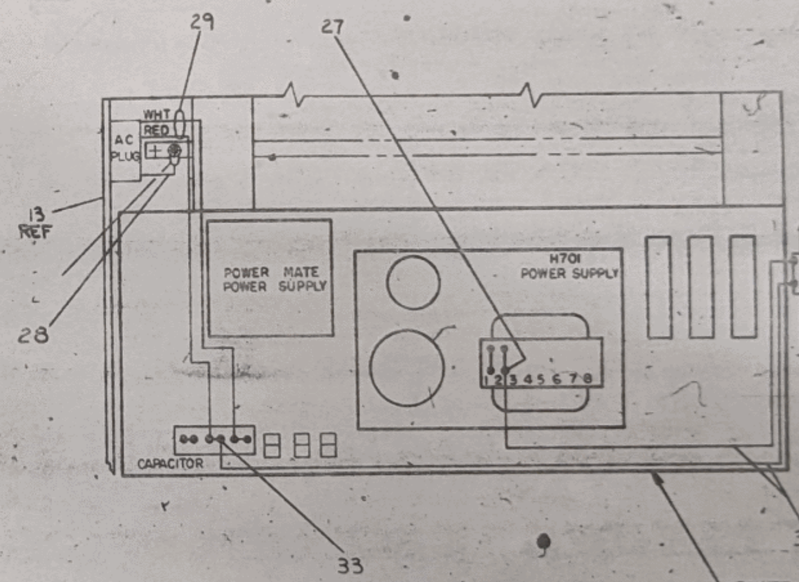
B | UA | AFOIB-A-0 | B



SECTION A-A



SECTION C-C



WIRING DIAGRAM
SEE SHEET #4 FOR
ADDITIONAL WIRING

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

EQUIPMENT CORPORATION

TITLE
A-D CONVERTER & MULT. AFOIB-A
(PDP 9)

SIZE B | CODE UA | AFOIB-A-0 | REV B

SCALE 1/1
SHEET 3 OF 4

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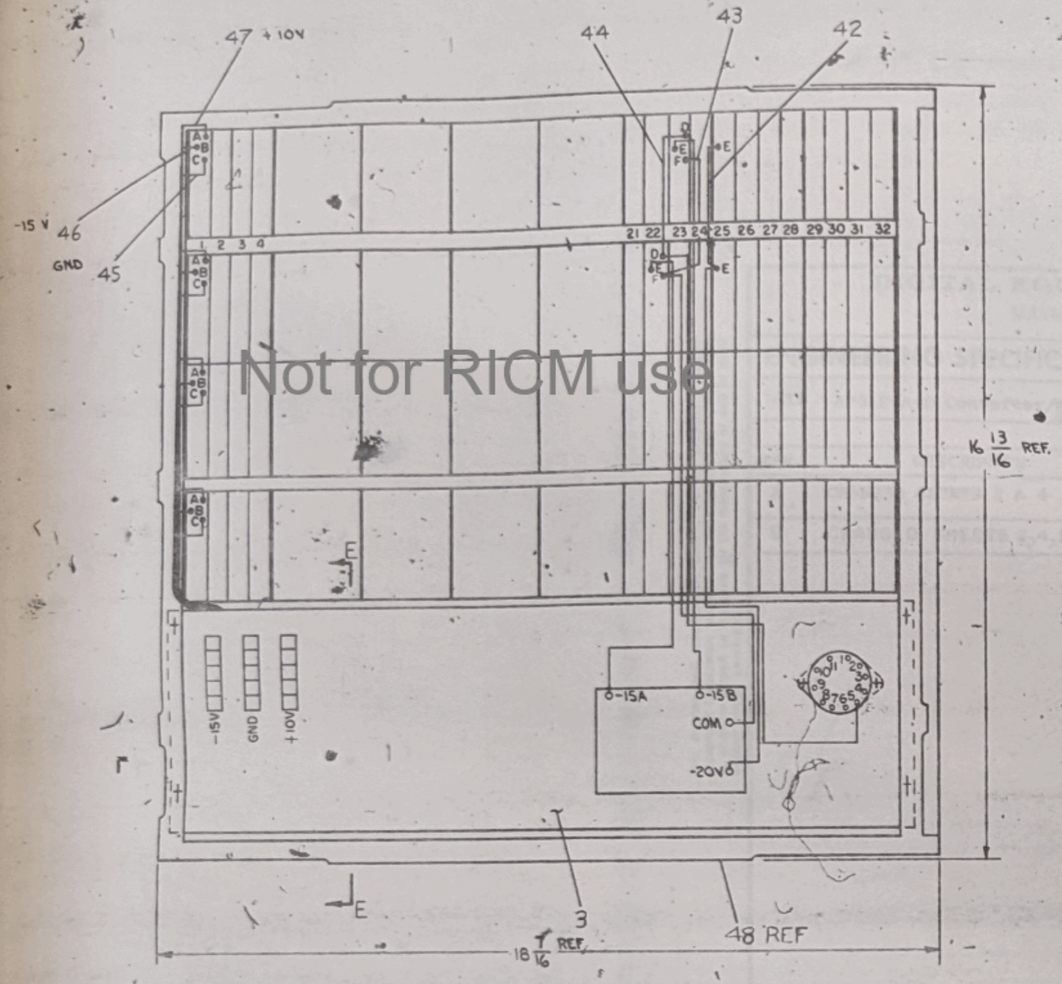
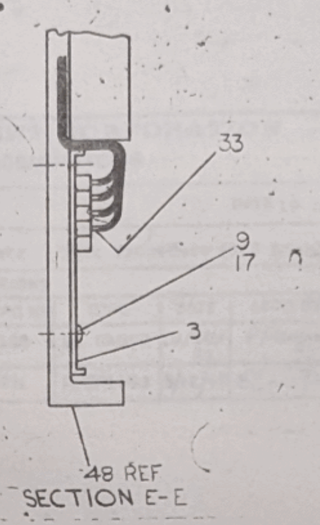


WIRING DIAGRAM
SEE "SHEET "3. FOR ADDITIONAL WIRING.



SECTION E-E

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UNLESS OTHERWISE SPECIFIED	DRN	DATE	DIGITAL EQUIPMENT CORPORATION
DIMENSION IN INCHES	CHK'D	DATE	
TOLERANCES	ENG	DATE	TITLE A-D CONVERTER & MULT. AF01B-A (PDP 9)
MATERIAL			
FINISH	FIRST USED ON		SIZE E CODE LA NUMBER AF01B-A-0 REV B
	SCALE 1/1		DIST
	SHEET 4 OF 4		

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 19 Dec 66

TITLE AF01B A-D Converter/Multiplexer Test Procedure (Off Line)

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED SHEETS 2 & 4	188	R. GAGNE	10/20/67	R Gagné	4/24/67
B	CHANGED SHEETS 2,4,5,&6	211	R. BRIGGS	3/12/68	R Gagné	3-13-68

ENG	APP	SIZE	CODE	NUMBER	REV
R.A. Gagne	R Gagné	A	SP	AF01B-A-2	B

DEC FORM NO.
DRA 107

SHEET 1 OF 6

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Model:

AF01B A-D Converter/Multiplexer (PDP-9)

1. Calibrate the "A" series modules using the "Module Alignment Test Procedure," drawing no. A-138E-0-13.

2. Decode the device selector modules, W103's, as follows:

D12	11
D13	12
D14	13

3. Plug the test cables into the converter as follows:

Tester	Converter
B1	C19
B2	D19
B3	C20
B4	D20

4. Adjust the H702 Power Supply to +15 volts and -20 volts measured at pins B22D and A25E with respect to B22F.

A-D Converter Test:

1. Set the function switches to AUTO, fast P.R.F., and PWR, CLR. There should be positive 400 ns. power clear pulses at pins A4H, and D8R, D8F.

2. Set the DS switch register on the tester to address 13.

3. Set the function switches to AUTO, fast P.R.F. and IOP 4. This generates the A-D convert pulse (IOt 1304) at pin A2E.

4. Set the WORD LENGTH switch at the front of the

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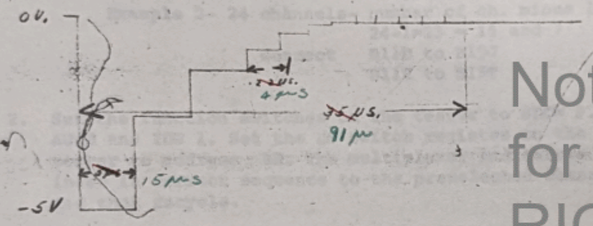
converter to 6 bits. Adjust the delay at A3V for .8 us. Adjust the delay at A3M for .7 us. The A-D Done level at D24 E and L should be positive for about 9 us.

5. Set the WORD LENGTH switch to 11 bits. Adjust the delay at B3M for 2.8 us.

6. Set the WORD LENGTH switch to 12 bits. Adjust the delay at B3V for .7 us. The A-D Done level at D24 E and L should be negative for about 35 us.

7. Look at A21N and see the DAC output. (Gnd. A21P)



8. Set the function switch to OFF. Ground A21P and depress the ADC switch at the front of the converter. The octal number 4000 should appear in the A-D Converter indicator lights.

9. Remove the ground from A21P and place -10 volts on A21P from the -10 volt ref. at A24E. Depress the ADC switch at the front of the converter. The octal number 3777 should appear in the indicator lights.

10. Place the function switches in MAN. and IOP2. Depress the MAN. push button on the tester. This reads the A-D buffer into the tester A-D buffer Check that the two buffers are the same.

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ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE

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Multiplexer Tests

1. Short cycle the multiplexer to the correct number of channels by connectong B11D and B11E to appropriate points on B19 and B20.

   Example 1- .4 channels- number of ch. minus 1
   4-1=3 (0) and 3
   connect B11D to B19D
   B11E to B20L

   Example 2- 24 channels- number of ch. minus 1
   24-1=23 = 16 and 7
   connect B11D to B19J
   B11E to B15T

2. Set the function switches on the tester to SLOW P.R.F., AUTO and IOP 1. Set the DS switch register on the tester to address 12. The multiplexer indicators should indec in correct sequence to the preselected channel and then recycle.

3. Set the function switch to OFF. By depressing the INDEX switch at the front of the multiplexer, the indicator should again cycle in the correct sequence.

4. Set the function switches to FAST P.R.F., AUTO and IOP 2. Set the DS switches to address 11. Adjust the delay at pin B16V for .4 us and at B16M for 0.6 us. Adust the delay at pin C6V for 2 us., 5 us for an amplifier, 10 us for a ample and hold.

5. Check to see that any multiplexer channel addressed from the multiplexer switches is automatically selected and read into the multiplexer indicators.

6. Set the function switches to MAN. and IOP 2. Set the multiplexer switches to 77 and depress the MAN. push button. Channel 64 (77_8) should have been selected.

7. Depress the CLR switch at the front of the multiplexer. This should clear the multiplexer indicators.

SIZE	CODE	NUMBER	REV
A	SP	AF01B-A-2	B

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DEC FORM NO DRA 108

SHEET 4 OF 6

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8. Depress the MAN. push button again, select ch. 64. Change the function switches to IOP 1 and AUTO. The indicators should again be cleared.

Calibration:

1. Make usre the "A" series modules have been adjusted.

2. If there is no multiplexer proceed to 3 below. If there is a multiplexer jump to 8 below.

3. Set the connector for 12 bits. Set the function switches to AUTO, SLOW P.R.F. and IOP 4. Set the DS switches to 18.

4. Apply an analog voltage to the input connector at the rear of the converter, the actual value of this voltage will depend on the customer requirement. Refer to the sheets of switching point voltages.

5. If the zero switching point (4000_8 -4001_8) is away from the theoretical voltage by more than 1L.S.B. a slight adjustment of the 200 ohm balance pot on the A502 should correct the problem.

6. The negative full scale switching point (3776_8 -3777_8) can be calibrated by adjusting the -10 volt reference supply A704 location AB24.

Check the rest of the switching points for linearity.

8. With a multiplexer, set the converter for 12 bits. Set the function switches to AUTO, SLOW P.R.R. and IOP 4. Set the DS switches to 18.

9. Select channel 0 by depressing the CLR switch at the front of the converter.

10. Apply an analog voltage to the input connector (ch. 0) at the rear of the converter.

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ENGINEERING SPECIFICATION [illegible] CONTINUATION SHEET

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TITLE.

11. Perform steps 4 through 7 above.

12. To select other channels use the INDEX switch at the front of the converter or set the function switches to MAN, IOP 2 and DS switches to 11. Select the new multiplexer address and depress the MAN. pu[illegible]tton. Go to 3 above.

RG:jeg

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	SIZE	CODE	NUMBER	REV
	A	SP	AF01B-A-2	B

DEC FORM NO.
DRA 108

SHEET 6 OF 6

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*USED ONLY WHEN 2 OR MORE AFØ1B ARE USED IN THE SAME SYSTEM SEE DWG.NO.A-CP-CMX10-2

APIØB #	MBØ	MB13
1	Ø	Ø
2	Ø	1
3	1	Ø
4	1	1

ALSO NOTE: THE SAME API ADDRESS WILL BE USED BY ALL AFØIB'S

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. G. Lehn DATE 1/24/72
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
FIRST USED ON UA-AFØ1B-A-0
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE INTERFACE LOGIC

SIZE D CODE BS NUMBER AFØ1B-0-2 REV. D
DIST.

CHG	CHANGE NO	INV
	ECO #41 7/14/67	A

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PARTS LIST — **DIGITAL EQUIPMENT CORPORATION** MAYNARD, MASSACHUSETTS

PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.
		7	R107 INVERTER	
		4	R302 DELAY (ONE SHOT)	
		1	R602 PULSE AMPLIFIER	
		13	R202 DUAL FLIP-FLOP	
		3	A601 DIGITAL-ANALOG CONVERTER	
		2	A604 DIGITAL- ANALOG CONVERTER	
		1	A502 COMPARATOR	
		1	A704 REFERENCE SUPPLIES	
	Not in Use	16	A121 MULTIPLEXER SWITCH	
		8	W850 PDP-9 CABLE CONN	
		2	R151 BINARY-TO-OCTAL DECODER	
		3	R205 DUAL FLIP-FLOP	
		1	R113 DIODE GATE	
		2	R603 PULSE AMPLIFIERS	
		2	R111 DIODE GATE	
		3	W501 NEG INPUT CONV & ST	

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REVISIONS

CHANGE NO.	DATE	ENG.
A-195	11/2/67	RAB
B→D-190	2-5-68	RD
E-216	3/25/68	RD (AW)

MADE BY JOHN LUBIN	DATE 4-11-67	TITLE MODULE UTILIZATION (AF01B)	SIZE A	CODE PL	NUMBER AF01B-0-1	REV. E
CHECKED J. Beaudoin	DATE 4-12-67	FOR	ASSY. NO. D-MU-AF01B-0-1		SHEET 1 OF 2	
ENG. R Hagan	DATE 5-5-67					

DEC FORM NO. DRA 109

PARTS LIST — **DIGITAL EQUIPMENT CORPORATION** MAYNARD, MASSACHUSETTS — **REVISIONS**

PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO, — MFG.	DEC. STOCK NO.	CHANGE NO.	DATE	ENG.
		2	W640 PULSE OUTPUT CONVERTER				
		1	W107 BUS RECEIVER FOLLOWER				
		4	R123 DIODE GATE				
		3	W103 PDP-8 DEVICE SELECTOR				
		3	W050 30MA INDICATOR DRIVER				
		1	R601 PULSE AMPLIFIER				
		1	W104 MULTIPLEXER CONTROL				

MADE BY JOHN LUBIN	DATE 4-11-67	TITLE MODULE UTILIZATION (AF01B)	SIZE A	CODE PL	NUMBER AF01B-0-1	REV. E
CHECKED	DATE 4-12-67	FOR	ASSY. NO. D-MU-AF01B-0-1		SHEET 2 OF 2	
ENG.	DATE 5-5-67					

DEC FORM-NO. DRA 109

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Not for RICM use

Only this single page for RICM use

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
R107	A-D CONV	PRE CLR POS	CLR FLG POS	AD CONV	REQ	DSØ	DSI		R382	R682	R282	R282	R282	R282	R282	R282	R282	R282	R282	R282	R282	R107	ADB 8	ADB 1	ADB 2	ADB 3	ADB 4	ADB 5	A-D DONE	A681	A681	A681	A684	A684	A582	A488	A784	A121	A121	A121

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W85Ø CD15 / W85Ø CD19

IO BUS ØØ
IO BUS Ø1
IO BUS Ø2
IO BUS Ø3
IO BUS Ø4
IO BUS Ø5
IO BUS Ø6
IO BUS Ø7
IO BUS Ø8

IO BUS Ø9
IO BUS 1Ø
IO BUS 11
IO BUS 12
IO BUS 13
IO BUS 14
IO BUS 15
IO BUS 16
IO BUS 17

W85Ø CD16 / W85Ø CD20

IO SYNC
IOP 1
IOP 2
IOP 4
SKIP RQ
PROG INT RQ
RD RQ
RD STATUS
IO PWR CLR

DS Ø
DS 1
DS 2
DS 3
DS 4
DS 5

SD Ø
SD 1

W85Ø CD17 / W85Ø CD 21

IO RUN (1)

IO OFLO
IO ADDR Ø3
IO ADDR Ø4
IO ADDR Ø5
IO ADDR Ø6
IO ADDR Ø7
IO ADDR Ø8

IO ADDR Ø9
IO ADDR 1Ø
IO ADDR 11
IO ADDR 12
IO ADDR 13
IO ADDR 14
IO ADDR 15
IO ADDR 16
IO ADDR 17

W85Ø CD18 / W85Ø CD 22

WRITE RQ
INC MB
+1→CA INH
API Ø RQ
API Ø GR (1)
API Ø EN IN
API 1 RQ
API 1 GR (1)
API 1 EN

API 2 RQ
API 2 GR (1)
API 2 EN
API 3 RQ
API 3 GR (1)
API 3 EN
DCH RQ
DCH GRANT
DCH EN

API Ø EN OUT

Not for RICM use

REVISIONS		
CHG	CHANGE NO.	REV
DW	ECO M185	A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .000 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRWN J.L. DATE 7-2-63
CHK DATE 3-9-67
ENGR DATE /67
MFG DATE /67
QA DATE /67
NEXT ASSY
FIRST USED ON D-UA-AF01B-A-0
SCALE
SHEET 1 OF 1

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
IO BUS INTERFACE

SIZE D | CODE IC | DWG AF01B-0-3 | REV A

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE, 9/28/67

TITLE: AF01A & AF01B A/D Converter and Multiplexer Engineering Specifications

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED PAGES 2, 4, AND 6 OF 8	213	R. GAGNE	12/7/67	R. Gagne	12/11/67

0. Overall Description

The General Purpose Multiplexed A/D Converter Type AF01A and AF01B is used with a PDP-8 or PDP-9 Computer to multiplex up to 64 analog signals and to convert the signals to binary numbers.

The A/D Converter is a variable (6 to 12 bits) successive-approximation type of converter. The system in general may be operated in either the random or sequential address modes. After indexing through the maximum number of channels implemented, the address is returned to 0. When using sequential operation, the conditioning levels for random addressing are ignored.

The multiplexer switch settling time is preset within the control to initiate the conversion process automatically after a channel has been selected in either the random or sequential address modes. Separate I/O Transfer Commands may also initiate one or more conversions on a currently selected channel.

1. General Specifications

1. Basic System:

a. A/D Converter variable word length (6 to 12 bits)

b. Multiplexer control for up to 64 channels of analog information (multiplexer switches are extra depending on customer requirements).

c. Complete interfacing to the PDP-8 or PDP-9 computers with necessary cables.

d. Input analog connectors for customer use.

e. Necessary power supplies and power cord.

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ENG	APP	SIZE	CODE	NUMBER	REV
R. Gagne	R. Gagne	A	SP	AF01A-0-4	A

DEC FORM NO. DRA 107

2. Options:

   a. A121 Multiplexer Switch (4 channels to a module)

   b. AH03 Amplifier Option (specify voltage range)

   c. AH02 Sample and Hold Option (specify voltage range)

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3. Mechanical Packaging:

   Panel Width — 19 inches
   Panel Height — 8 11/16 inches
   Depth — 22 inches from mounting surface to end of cable connectors.

   Mounting
   a. AF01A-A, AF01B-A Cabinet mounted with chassis tracks, no cover or fan.
   b. AF01A-B, AF01B,B table top unit with cover and cooling fan.

4. Environmental Specifications and Power Requirements:

   a. Operating Temperature Range is 0 to 50°C.

   b. Input Power is 115 volts 60 cycles at less than ½ amp.

5. General Performance Specifications (Measured at input connector):

	Without Options	AH02 Option (S & H)	AH03 Option (Amplifier)
Input Signal (max)	0 to -10v	± 10v	± 10v
Input Current (max)	1.0 μa	1.0 ma	1.0 ma
Switch Settling Time To 1-LSB (source 1 ohm)	2 μsec.	10 μsec.	5 μsec.
Accuracy	.025% ± ½ LSB	.040% ± ½ LSB	.030% ± ½ LSB
Conversion Time	See Table	See Table	See Table
Aperture Time	Conv. Time	150.nsec.	Conversion Time
Droop	None	1v/sec.	None
Converter Recovery Time	None	None	None

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2. Specification of Vendor - Supplied Equipment

1. Regulated Power Supply:

Input:	105 - 125v 47 - 420 cps
Output:	Floating 15v., 20v., @ 400 ma
Regulation:	± 0.05% vs line & load
Ripple:	Less than 0.002%, or 1 mv. R.M.S. whichever is greater
Operating Ambient Temp:	-20 to +71°C
Cooling:	None required at specified ambient temperatures
Polarity:	May be either positive, negative or floating each supply independent
Overload Protection:	Solid State short circuit and overload protected instantaneous recovery and automatic reset.
Remote Sencing:	

2. Input Connectors:

2 - 104 pin connectors

3. Programming

1. Listing and Description of Instructions:

Mnemonic Symbol		Octal Code		Operation Executed
PDP-8	PDP-9	PDP-8	PDP-9	
ADSF	ADSF	6531	701301	Skip if A/D Converter flag is set.
ADCV	ADSC	6532	701304	Clear A/D Converter flag and convert input voltage to a digital number.
ADRB	ADRB	6534	701312	Read A/D Converter buffer into AC, left justified and clear flag.
ADCC	------	6541	------	Clear multiplexer channel address register.
ADSC	ADSM	6542	701103	Select multiplexer channel
ADIC	ADIM	6544	701201	Index multiplexer channel address. Upon reaching address limit, increment will cause channel 0 to be selected.
----	ADRM	----	701212	The contents of the multiplexer address registe is placed in AC bits 12-17.

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2. Description of special maintenance instructions:

All maintenance instructions can be found under section II. Preventative Maintenance Procedures.

3. Description of data formats:

The standard output data from the A/D buffer is a binary number of 6 to 12 bits with negative numbers represented in 2's complement notation. A 0v input gives a 4000 output; a -5v input gives a 0000 output; a -10v (minus 1 LSB) input gives a 3777 output.

Other data formats are available as specials.

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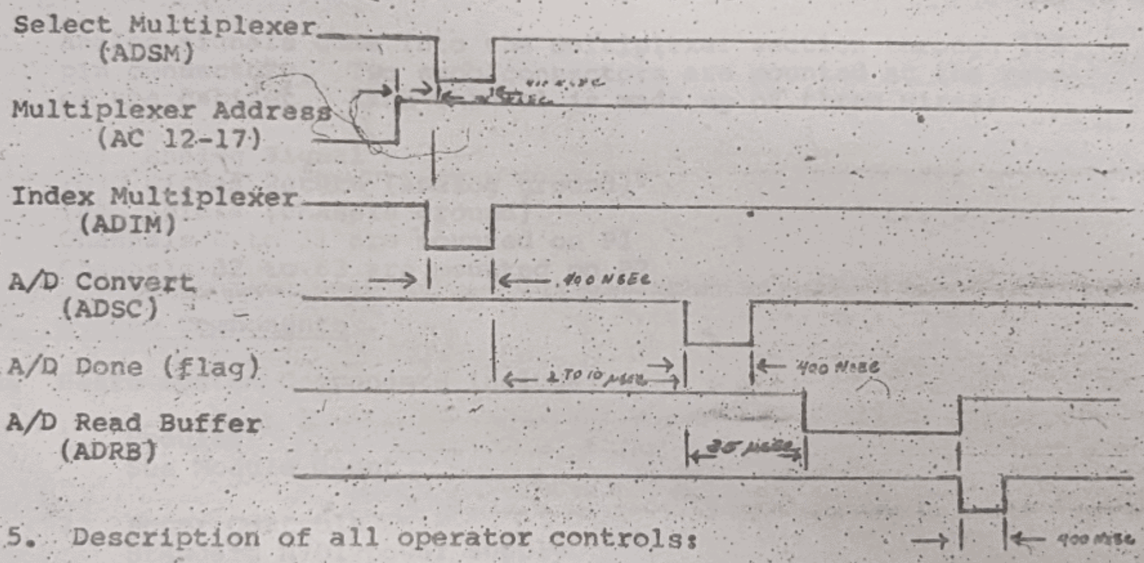
4. Timing diagrams of signals available to programmer:



5. Description of all operator controls:

Five convenience switches are mounted on the control indicator panel: a power switch to control the AC power to the system; an ADC push button switch to manually initiate a conversion; a CLR push button switch to manually preset the multiplexer address to channel 0; an index push button to manually increment the multiplexer address; and a rotary word-length switch to select the word length, conversion accuracy, and conversion time.

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The control panel also contains twelve indicators to display the contents of the ADC buffer, six indicators to display the current multiplexer address, and a power on-off indicator.

6. Meaning of status bits:

The AF01A, AF01B normally run through the program interrupt although use through the A.P.I. is available. The only flag is A/D Done which goes negative at the end of conversion. (Gnd. is also available.)

4. Installation Data:

The AF01A or AF01B requires no special installation procedure the system plugs into any standard 115 volt AC 60 cycle output provided with U ground.

5. Interface Specifications

1. Interfacing is done through the standard IO Bus.

2. Analog signals come into the multiplexer section through 104 pin connectors. Two such connectors are mounted at the rear of the cabinet. Each channel is made up of three wires:

(a) Analog Signal
(b) Signal Return (analog ground)
(c) Shield (chassis ground)
Channels 0 to 31 are mounted on P1
Channels 32 to 63 are mounted on P2

7. System Components

1. Basic System Components include:

1. Modules
See Module Count

2. Power Controls
Standard H701 power supply
Regulated +15v; -20v Analog power supply

3. Cables
Standard IO Cables

4. Vendor supplied equipment
Regulated power supply

8. Checkout Specifications

Test to be run on assembled systems:

AF01A Maindec -08-D6GA-D
AF01B Maindec -9A-D6GA-D

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Specifications

SWITCHING POINT ERROR: SEE TABLE

Accuracy: See Table

Word Length (No. of bits)	Max. Switching Point Error *	Conversion Time (μsec)
6	± 1.6%	9.0
7	± 0.8%	10.5
8	± 0.4%	12.0
9	± 0.2%	13.5
10	± 0.1%	18.0
11	± 0.05%	25.0
12	± 0.025%	35.0

* ± ½ LSB for quantizing error

Margins: + 10 volts ± 4 volts
- 15 volts ± 2 volts

Converter should not change by more than two states.

Temperature: 0°C to 50°C

Analog voltage source should be a noise free variable 0 to ± 10 volt source accurate to 0.01% or better with an output impedance of less than one ohm.

9. Acceptance Test Procedures

1. Incoming test on vendor equipment will be performed by incoming inspection to meet contract specifications.

2. Before system shipment run

AF01A MAINDEC 08-D6GA-D
AF01B MAINDEC 'A-D6GA-D

Specifications:

Accuracy: See Table

SWITCHING POINT ERROR: SEE TABLE

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Word Length (No. of bits)	Max. Switching Point Error*	Conversion Time (μsec)
6	± 1.6%	9.0
7	± 0.8%	10.5
8	± 0.4%	12.0
9	± 0.2%	13.5
10	± 0.1%	18.0
11	± 0.05%	25.0
12	± 0.025%	35.0

* ± ½ LSB for quantizing error.

Margins: + 10 volts ± 4 volts
- 15 volts ± 2 volts

Converter should not change by more than two states.

Temperature: 0°C to 50°C

3. Analog voltage source should be a noise free variable 0 to ±10 volt source accurate to 0.01% or better with an output impedance of less than one ohm.

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4. Field installed systems will run the same Maindecs as (2) above and meet the same specifications as above.

10. Spare Parts

1. Modules
Spare modules will be the responsibility of the user.

11. Preventative Maintenance Procedures

In order to insure reliable operation of the AF01A, AF01B the following maintenance procedures should be followed:

a. Electrical: Calibration should be checked daily although weekly is usually sufficient.

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(1) Set the word length to 12 bits and apply an analog voltage to the input that will cause the A/D Buffer to switch between 4000_8 and 4001_8.

(2) If the switching point voltage is away from the theoretical voltage by more than ± 1 LSB a slight adjustment of the 200 ohm balance pot on the A502 should correct the problem.

(3) The full scale switching point 3776_8 to 3777_8 can be calibrated by adjusting the -10 volt reference supply A704.

b. Mechanical: When a cooling fan is mounted on the system a visual inspection of the filter should be performed weekly and it should be cleaned when necessary, at least once every three months.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 12/18/67

TITLE AF01A and AF01B Acceptance Procedure

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

Not for RICM use

Scope: To define the criteria to accept for shipment models AF01A or AF01B and the AH02 and AH03 options when installed in these units.

Test Software:

Engineering Specifications		A-SP-AF01A-0-4
Calibration Program (AF01A)		MAINDEC-08-D6GB-D
Calibration Program (AF01B)		MAINDEC-9A-D6GA-D
Voltage Ref. Table	Ref:	A-SP-AF01A-0-22

Test Hardware:

Tester	D-CS-AF01A-A-2
Other Equipment	Elec. Dev. Corp: precision voltage source, model VS11N or equivalent

Procedure:

Confirm the calibration of the unit being accepted using the calibration program and tester. The "desired voltages" called out in section 5.0 of the program write-up must be supplied by the specified voltage source in accordance with the voltage reference table. A unit is accepted for shipment to a customer when each of output voltage readings has been obtained within the specified tolerances as outlined by the appropriate voltage reference table. Complete an Option Check List form before shipment.

ENG	APPD	SIZE	CODE	NUMBER	REV
K P Gagne		A	SP	AF01A-0-9	

DEC FORM NO. DRA 107

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TITLE AF01A and AF01B Acceptance Procedure

Shipping Software:

Manual		DEC-00-16AA-D
Calibration Program (AF01A)		MAINDEC-08-D6GB-D
Calibration Program (AF01B		MAINDEC-9A-D6GA-D
Voltage Ref. Table	Ref:	A-SP-AF01A-0-22
Prints		A-ML-AF01A-A or B-Serial#
		A-ML-AF01B-A or B-Serial#

Shipping Hardware:

I/O Cables (AF01A)	74-5556-7 (10 ft.)
(6 ea. of proper length)	74-5556-4 (6 ft.)
I/O Cables (AF01B)	74-5313-1 (2 ft.)
(2 ea. of proper length)	74-5313-2 (7 ft.)
	74-5313-3 (10 ft.)
	74-5313-4 (15 ft.)
	74-5313-5 (25 ft.)
	74-5313-6 (100 ft.)

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Other Hardware:

2 sets...12-5729 plug and 12-5731 pins (100 ea.)

SIZE	CODE	NUMBER	REV
A	SP	AF01A-0-9	

PARTS LIST

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.	REVISIONS CHANGE NO.	DATE	ENG.
		1	A400 STD SAMPLE & HOLD		A-44	4-7-68	RAS 11/9/67
		1	R202 DUAL FLIP-FLOP				
		1	A200 AMPLIFIER				

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MADE BY J. LUBIN	DATE 3/15/67	TITLE MODULE UTILIZATION (AH02)	SIZE A	CODE PL	NUMBER AH02-0-2	REV. A
CHECKED P. Lanoueault	DATE 4-12-67	FOR	ASSY. NO. D-BS-AH02-0-1		SHEET 1 OF 1	
ENG. R Gagne	DATE 5-5-67					

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DEC FORM NO. DRA 109

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MUX CH DLY

MUX CH. DLY

MAB Ø (C1K) MA1 (C1J) MA2 (C1H) MA3 (C1F) MA4 (C1E) MA5 (C1D)

MAB Ø MAB 1 MAB2 MAB 3 MAB 4 MAB 5

NOTE
* TO SHORT CYCLE CONNECT B11D & B11E TO APPROPRIATE POINTS ON B19 & B20.

R302 C6 2-10 µS

1000 PF

R302 B16 .6 µS

R302 B16 0.4µSEC

PA R603 B10

PA R601 B9

CYCLE

IOT 542/ 1102 (ADSC ADSM)

IOT 541/1101 (ADCC)

ID 154045A C1

CLR

ST W601 C3

ST W501 C4

INDEX

IOT 544/1201 (ADIC ADI)

R151 B17

R151 B18

R205 Ø B12 MAR Ø

R205 Ø B12 MAR 1

R205 Ø B13 MAR 2

R205 Ø B13 MAR 3

R205 Ø B14 MAR 4

R205 Ø B14 MAR 5

BAC 6 MAI Ø (C8E)

BAC 7 MAI 1 (C8H)

BAC 8 MAI 2 (C8K)

BAC 9 MAI 3 (C8M)

BAC 10 MAI 4 (C8P)

BAC 11 MAI 5 (C8S)

QTY.	DESCRIPTION	PART NO.	ITEM NO
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH, SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. J. Lubin DATE 11/2/62
CHK'D. DATE
ENG. DATE 5/3/67
PROJ. ENGR. DATE 5/3/67
PROD. DATE 5/3/62
FIRST USED ON D-UA-AMX1-4-0
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MULTIPLEX CONT
64 CHANNEL

SIZE D | CODE BS | NUMBER AMX1-0-2 | REV A
DIST.

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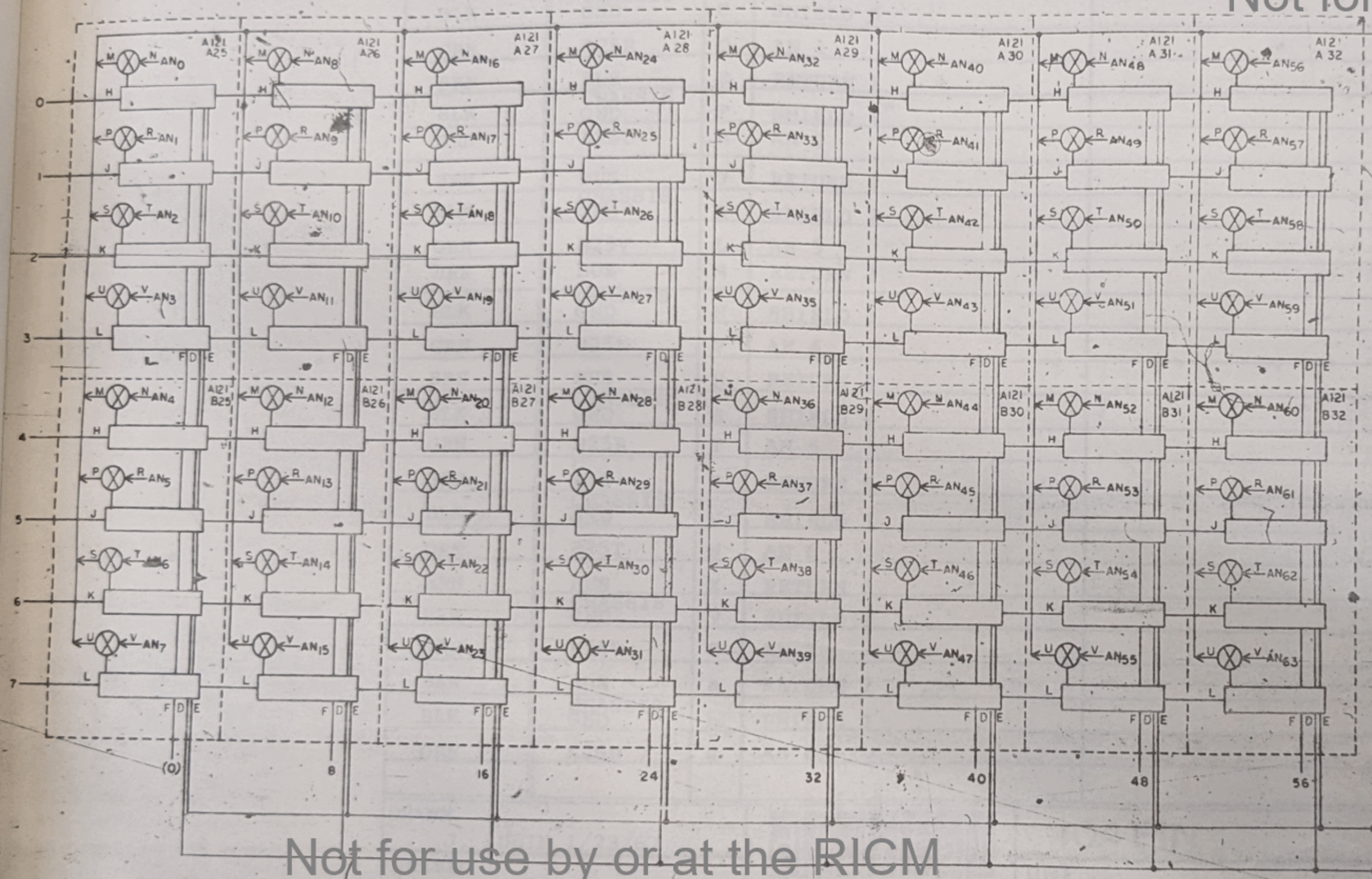

AMPLIFIER OPTION
SEE DWG NO D-35-AH03-0-1

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scanned by Steve M. 20250415

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRWN [illegible] DATE 11 Mar 67
CHKD [illegible] DATE 3 Apr 67
ENGR [illegible] DATE 4/11/67
PROJ ENGR [illegible] DATE 4/11/67
MFG [illegible] DATE 4/11/67

FIRST USED ON
D-UA-AMX1-A-0

SCALE

SHEET 1 OF 1

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
ANALOG
MULTIPLEXER

SIZE D | CODE BS | NUMBER AMX1-0-3 | REV A

DIST.

JACK [X] PLUG [ ]

FEMALE [ ] MALE [X]

LOCATION, LENGTH, ROUTE

P1

COLOR	PIN.	PIN	NAME	REMARKS
GRN	A25N	A	AN Ø	
BRN	BUS	B	RETURN Ø	
BLK	CHASSIS GND	C	SHIELD Ø	
GRN	A25R	D	AN 1	
BRN	BUS	E	RETURN 1	
BLK	CHASSIS GND	F	SHIELD 1	
GRN	A25T	H	AN 2	
BRN	BUS	J	RETURN 2	
BLK	CHASSIS GND	K	SHIELD 2	
GRN	A25V	L	AN 3	
BRN	BUS	M	RETURN 3	
BLK	CHASSIS GND	N	SHIELD 3	
GRN	B25N	P	AN 4	
BRN	BUS	R	RETURN 4	
BLK	CHASSIS GND	S	SHIELD 4	
GRN	B25R	T	AN 5	
BRN	BUS	U	RETURN 5	
BLK	CHASSIS GND	V	SHIELD 5	
GRN	B25T	W	AN 6	
BRN	BUS	X	RETURN 6	
BLK	CHASSIS GND	Y	SHIELD 6	
GRN	B25V	Z	AN 7	
BRN	BUS	a	RETURN 7	
BLK	CHASSIS GND	b	SHIELD 7	
GRN	A26N	c	AN 8	

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DRAWN J. LUBIN 1/23/67

CHECKED P. DAIGNEAULT 3/21/67

ENG R.Hague 5-5-67

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

104 PIN

TITLE

ANALOG INPUT CABLE

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 1 OF 8

APP'V	ECO. NO. REV. LTR.
RAH.	ECO#151-A

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JACK [X] PLUG [ ]
FEMALE [ ] MALE [X]

LOCATION, LENGTH, ROUTE

P1

COLOR	PIN.	PIN	NAME	REMARKS
BRN	BUS	d	RETURN 8	
BLK	CHASSIS GND	f	SHIELD 8	
GRN	A26R	q	AN 9	
BRN	BUS	h	RETURN 9	
BLK	CHASSIS GND	i	SHIELD 9	
GRN	A26T	j	AN 10	
BRN	BUS	k	RETURN 10	
BLK	CHASSIS GND	m	SHIELD 10	
GRN	A26V	n	AN 11	
BRN	BUS	p	RETURN 11	
BLK	CHASSIS GND	q	SHIELD 11	
GRN	B26N	r	AN 12	
BRN	BUS	s	RETURN 12	
BLK	CHASSIS GND	t	SHIELD 12	
GRN	B26R	u	AN 13	
BRN	BUS	v	RETURN 13	
BLK	CHASSIS GND	w	SHIELD 13	
GRN	B26T	x	AN 14	
BRN	BUS	y	RETURN 14	
BLK	CHASSIS GND	z	SHIELD 14	
GRN	B26V	AA	AN 15	
BRN	BUS	AB	RETURN 15	
BLK	CHASSIS GND	AC	SHIELD 15	
GRN	A27N	AD	AN 16	
BRN	BUS	AE	RETURN 16	

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or its staff

DRAWN J. LUBIN 1/23/67
CHECKED P. DAIGNEAULT 3/21/67
ENG R A Gagne 5-5-67

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

Not for RICM use

APP'V
ECO. NO.
REV. LTR.

104 PIN

TITLE
ANALOG INPUT CABLE

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 2 OF 8

JACK [X] PLUG [ ]
FEMALE [ ] MALE [X]

LOCATION, LENGTH, ROUTE

P1

COLOR	PIN	PIN	NAME	REMARKS
BLK	CHASSIS GND	AF	SHIELD 16	
GRN	A27R	AH	AN 17	
BRN	BUS	AJ	RETURN 17	
BLK	CHASSIS GND	AK	SHIELD 17	
GRN	A27T	AL	AN 18	
BRN	BUS	AM	RETURN 18	
BLK	CHASSIS GND	AN	SHIELD 18	
GRN	A27V	AP	AN 19	
BRN	BUS	AR	RETURN 19	
BLK	CHASSIS GND	AS	SHIELD 19	
GRN	B27N	AT	AN 20	
BRN	BUS	AU	RETURN 20	
BLK	CHASSIS GND	AV	SHIELD 20	
GRN	B27R	AW	AN 21	
BRN	BUS	AX	RETURN 21	
BLK	CHASSIS GND	AY	SHIELD 21	
GRN	B27T	AZ	AN 22	
BRN	BUS	BA	RETURN 22	
BLK	CHASSIS GND	BB	SHIELD 22	
GRN	B27V	BC	AN 23	
BRN	BUS	BD	RETURN 23	
BLK	CHASSIS GND	BE	SHIELD 23	
GRN	A28N	BF	AN 24	
BRN	BUS	BH	RETURN 24	
BLK	CHASSIS GND	BJ	SHIELD 24	

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ENG R A Gagne 5-5-67

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

APP'V
ECO. NO. REV. LTR.

104 PIN

TITLE
ANALOG INPUT CABLE

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 3 OF 8

JACK [X] PLUG [ ]
FEMALE [ ] MALE [X]

LOCATION, LENGTH, ROUTE

P1

COLOR	PIN	PIN	NAME	REMARKS
GRN	A28R	BK	AN 25	
BRN	BUS	BL	RETURN 25	
BLK	CHASSIS GND	BM	SHIELD 25	
GRN	A28T	BN	AN 26	
BRN	BUS	BP	RETURN 26	
BLK	CHASSIS GND	BR	SHIELD 26	
GRN	A28V	BS	AN 27	
BRN	BUS	BT	RETURN 27	
BLK	CHASSIS GND	BU	SHIELD 27	
GRN	B28N	BV	AN 28	
BRN	BUS	BW	RETURN 28	
BLK	CHASSIS GND	BX	SHIELD 28	
GRN	B28R	BY	AN 29	
BRN	BUS	BZ	RETURN 29	
BLK	CHASSIS GND	CA	SHIELD 29	
GRN	B28T	CB	AN 30	
BRN	BUS	CC	RETURN 30	
BLK	CHASSIS GND	CD	SHIELD 30	
GRN	B28V	CE	AN 31	
BRN	BUS	CF	RETURN 31	
BLK	CHASSIS GND	CH	SHIELD 31	

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APP'V
ECO. NO.
REV. LTR.

104 PIN

TITLE ANALOG INPUT CABLE

Not for RICM use

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 4 OF 8

Not for RICM use

JACK [X] PLUG [ ]
FEMALE [ ] MALE [X]

LOCATION, LENGTH, ROUTE

P2

COLOR	PIN	PIN	NAME	REMARKS
GRN	A29N	A	AN 32	
BRN	BUS	B	RETURN 32	
BLK	CHASSIS GND	C	SHIELD 32	
GRN	A29R	D	AN 33	
BRN	BUS	E	RETURN 33	
BLK	CHASSIS GND	F	SHIELD 33	
GRN	A29T	H	AN 34	
BRN	BUS	J	RETURN 34	
BLK	CHASSIS GND	K	SHIELD 34	
GRN	A29V	L	AN 35	
BRN	BUS	M	RETURN 35	
BLK	CHASSIS GND	N	SHIELD 35	
GRN	B29N	P	AN 36	
BRN	BUS	R	RETURN 36	
BLK	CHASSIS GND	S	SHIELD 36	
GRN	B29R	T	AN 37	
BRN	BUS	U	RETURN 37	
BLK	CHASSIS GND	V	SHIELD 37	
GRN	B29T	W	AN 38	
BRN	BUS	X	RETURN 38	
BLK	CHASSIS GND	Y	SHIELD 38	
GRN	B29V	Z	AN 39	
BRN	BUS	a	RETURN 39	
BLK	CHASSIS GND	b	SHIELD 39	
GRN	A3ØN	c	AN 4Ø	

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MAYNARD, MASSACHUSETTS

APP'V
ECO. NO. REV. LTR.

104PIN

TITLE
ANALOG INPUT CABLE

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 5 OF 8

JACK [X] PLUG [ ]
FEMALE [ ] MALE [X]

LOCATION, LENGTH, ROUTE

P2

COLOR	PIN	PIN	NAME	REMARKS
BRN	BUS	d	RETURN 40	
BLK	CHASSIS GND	f	SHIELD 40	
GRN	A3ØR	g	AN 41	
BRN	BUS	h	RETURN 41	
BLK	CHASSIS GND	i	SHIELD 41	
GRN	A3ØT	j	AN 42	
BRN	BUS	k	RETURN 42	
BLK	CHASSIS GND	m	SHIELD 42	
GRN	A3ØV	n	AN 43	
BRN	BUS	p	RETURN 43	
BLK	CHASSIS GND	q	SHIELD 43	
GRN	B3ØN	r	AN 44	
BRN	BUS	s	RETURN 44	
BLK	CHASSIS GND	t	SHIELD 44	
GRN	B3ØR	u	AN 45	
BRN	BUS	v	RETURN 45	
BLK	CHASSIS GND	w	SHIELD 45	
GRN	B3ØT	x	AN 46	
BRN	BUS	y	RETURN 46	
BLK	CHASSIS GND	z	SHIELD 46	
GRN	B3ØV	AA	AN 47	
BRN	BUS	AB	RETURN 47	
BLK	CHASSIS GND	AC	SHIELD 47	
GRN	A31N	AD	AN 48	
BRN	BUS	AE	RETURN 48	

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104 PIN

TITLE
ANALOG INPUT CABLE

APP'V
ECO. NO. REV. LTR.

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 6 OF 8

JACK [X] PLUG [ ] FEMALE [ ] MALE [X]	LOCATION, LENGTH, ROUTE P2			
COLOR	PIN	PIN	NAME	REMARKS
BLK	CHASSIS GND	AF	SHIELD 48	
GRN	A31R	AH	AN 49	
BRN	BUS	AJ	RETURN 49	
BLK	CHASSIS GND	AK	SHIELD 49	
GRN	A31T	AL	AN 50	
BRN	BUS	AM	RETURN 50	
BLK	CHASSIS GND	AN	SHIELD 50	
GRN	A31V	AP	AN 51	
BRN	BUS	AR	RETURN 51	
BLK	CHASSIS GND	AS	SHIELD 51	
GRN	B31N	AT	AN 52	
BRN	BUS	AU	RETURN 52	
BLK	CHASSIS GND	AV	SHIELD 52	
GRN	B31R	AW	AN 53	
BRN	BUS	AX	RETURN 53	
BLK	CHASSIS GND	AY	SHIELD 53	
GRN	B31T	AZ	AN 54	
BRN	BUS	BA	RETURN 54	
BLK	CHASSIS GND	BB	SHIELD 54	
GRN	B31V	BC	AN 55	
BRN	BUS	BD	RETURN 55	
BLK	CHASSIS GND	BE	SHIELD 55	
GRN	A32N	BF	AN 56	
BRN	BUS	BH	RETURN 56	
BLK	CHASSIS GND	BJ	SHIELD 56	

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104 PIN

TITLE

ANALOG INPUT CABLE

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APP'V

ECO. NO. REV. LTR.

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 7 OF 8

JACK [X] PLUG [ ] FEMALE [ ] MALE [X]	LOCATION, LENGTH, ROUTE P2			
COLOR	PIN	PIN	NAME	REMARKS
GRN	A32R	BK	AN 57	
BRN	BUS	BL	RETURN 57	
BLK	CHASSIS GND	BM	SHIELD 57	
GRN	A32T	BN	AN 58	
BRN	BUS	BP	RETURN 58	
BLK	CHASSIS GND	BR	SHIELD 58	
GRN	A32V	BS	AN 59	
BRN	BUS	BT	RETURN 59	
BLK	CHASSIS GND	BU	SHIELD 59	
GRN	B32N	BV	AN 60	
BRN	BUS	BW	RETURN 60	
BLK	CHASSIS GND	BX	SHIELD 60	
GRN	B32R	BY	AN 61	
BRN	BUS	BZ	RETURN 61	
BLK	CHASSIS GND	CA	SHIELD 61	
GRN	B32T	CB	AN 62	
BRN	BUS	CC	RETURN 62	
BLK	CHASSIS GND	CD	SHIELD 62	
GRN	B32V	CE	AN 63	
BRN	BUS	CF	RETURN 63	
BLK	CHASSIS GND	CH	SHIELD 63	

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ENG R Hagni 5-5-67
APP'V
ECO. NO. REV. LTR.

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

104 PIN

TITLE ANALOG INPUT CABLE

DWG NO A-CL-AMX1-0-4

CODE A

SHEET 8 OF 8

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ANALOG INPUT

COMP A502 A21

A7Ø4 AB24

AGØ4 A2Ø

AGØ4 A19

AGØ1 A18

AGØ1 A17

AGØ1 A16

ADB Ø (DIS) ADC Ø

ADB 1 (DIR) ADC 1

ADB 2 (DIP) ADC 2

ADB 3 (DIN) ADC 3

ADB 4 ADC 4 (DIM)

ADB 5 ADC 5 (DIL)

ADB 6 (DIK) ADC 6

ADB 7 (DIJ) ADC 7

ADB 8 (DIH) ADC 8

ADB 9 (DIF) ADC 9

ADB 1Ø (DIE) ADC 1Ø

ADB 11 (DID) ADC 11

ID WØ5Ø D2

ID WØ5Ø D3

RIØ7 A14

RIØ7 A15

SW1 E1

SW1 E2

SW1 E3

SW1 E4

SW1 E5

SW1 E6

SW1 C7

3K 1/4W ±10% -15V

SW1 B1

SW1 B2

SW1 B3

SW1 B4

SW1 B5

SW1 B6

SW1 B7

R2Ø2 Ø B5 (ADØ)

R2Ø2 Ø B6 AD1

R2Ø2 Ø B7 AD2

R2Ø2 Ø B8 AD3

R2Ø2 Ø A5 AD4

R2Ø2 Ø A6 AD5

R2Ø2 Ø A7 AD6

R2Ø2 Ø A8 AD7

R2Ø2 Ø A9 AD8

R2Ø2 Ø A11 AD9

R2Ø2 Ø A12 AD1Ø

R2Ø2 Ø A12-1 AD11

R2Ø2 Ø A13 AD12

100Ω 1/4W 10% .01MF

PA RGØ3 B4

PA RGØ2 A4

SWIDS

SWIDG

SWID

R2Ø2 Ø B5 SHØ

R2Ø2 Ø B6 SH1

R2Ø2 Ø B7 SH2

R2Ø2 Ø B8 SH3

R2Ø2 Ø A5 SH4

R2Ø2 Ø A6 SH5

R2Ø2 Ø A7 SH6

R2Ø2 Ø A8 SH7

R2Ø2 Ø A9 SH8

R2Ø2 Ø A11 SH1Ø

R2Ø2 Ø A12 SH11

R2Ø2 Ø A13 SH12

100Ω 1/4W .01MF

3K 1/4W ±10% -15V

PWR CLR POS

PWR CLR

A-D CONVERT

AD12 (1)

A-D DONE

IOT 1302/534 (CLR FLG 1312)

(A 13 D)

RIØ7 A2

Note A-D Conv uses following code

0 V. → 0000

-5 V. → 3777

-10 V → 7777

Connection B5J to A14 E should be shown as B5H to A14 E

P.F 13/10/72

REV	CHANGE NO.	CHK
A	ECO 151 5-16-67	
B	ECO 199 10/10/67	
C	ECO 199 10/24/67	

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

DIMENSION IN INCHES

TOLERANCES

DECIMALS .005 FRACTIONS 1/64 ANGLES ± 0°30'

FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. D Lahm DATE 10/24/67

CHK'D DATE

ENG DATE 11/14/67

ENGR ENG. DATE 11/14/67

MGR DATE 11/14/67

FIRST USED ON D LIA-ADC1-A-0

SCALE

SHEET 1 OF 2

digital EQUIPMENT CORPORATION

TITLE

FLIP CHIP A-D CONVETER

SIZE D | CODE DBS | NUMBER ADC1-0-2 | REV C

DIST.

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WORD LENGTH CONTROL SWITCH 1

A9N — B3E, B3N, B3V

A13L — A6H, A7H, A8H, A9H, A10H, A11H, A12H

A16V — A13J

A13V — B5T, B7S

A15C — A15B, A15F, A15J, A15L, A15N, A15R

B#4D — R3Ø2 A3 7US — AD12(Ø) (A13J) — R3Ø2 A3 8US — SW1 A

SW1 A5 — 3K 1/4W ±10% -15V — SW1 A7 — R3Ø2 B3 7US — 4μS — 1200pf

PA R6Ø2 A4 — (A13U)

SH12(1) (A13S) — SH12(Ø) (A13T) — R3Ø2 B3 2.8US — 1.5μS — 1200pf

SW1 A1

5404054 C1 — ADC — ST W501 C2 — PA W64Ø C7 — R1Ø7 A2 — (B4R) — R111 B2 — R111 B1

A-D CONVERT

PA W64Ø C7 — R1Ø7 A2

MUX CH DLY (C11J) — R111 C11 — R1Ø7 D11 — IOT 532/1304 (ADCV) (AD SC)

AH03 B25/N START A/D

* THIS WIRE IS TO BE REMOVED FROM ALL ADCI'S ONLY.

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QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST*

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 2°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. J. Lin 11/3/67
CHK'D. M. Crandall 11-7-67
ENG. K. Wagner 11/14/67
PROJ. ENG. K. Wagner 11/14/67
MOD. K. Wagner 11/14/67
FIRST USED ON D-UA-ADC1-A-0

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: FLIP CHIP A-D CONVERTER

SIZE D | CODE BS | NUMBER ADC1-0-2 | REV. C

SCALE

SHEET 2 OF 2 | DIST.

REVISIONS: REV. | CHNG. NO

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COMPONENT NAME	VALUE	POL.	FROM PIN	TO PIN	POL.
CAPACITOR	1000 PF		C6R	C6S	
RES/CAP (7404649)	100 OHMS.01uf 1/4W 10%		A5D	GND	
"	"		A5K	"	
"	"		A5N	"	
"	"		B5R	"	
RESISTOR	3K 1/4W 10%		A6H	-15V	
"	"		A7H	"	
"	"		A8H	"	
"	"		A9H	"	
"	"		A10H	"	
"	"		A11H	"	
"	"		A12H	"	
"	"		A13J	"	
"	"		B5T	"	
"	"		B7S	"	
"	"		B3V	"	
NOTE:					
ADD JUMPER FROM	C18P —— C22P	ON	AF01B WHEN	API IS NOT USED	

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REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	6-16-67	ECO #151	RAH.
B	11/7/67	ECO #195	RAH.
C	3-28-68	216	RD

DRN. J. LUBIN	DATE 1/23/67	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. [illegible]	DATE 4-12-67	
ENG. [illegible]	DATE 5/5/67	TITLE: EXTERNAL COMPONENT LIST FOR A-D CONVERTER
PROJ. ENG. [illegible]	DATE 5/5/67	
PROD. [illegible]	DATE 5/5/67	
FIRST USED ON: D-UA-CMX1-0-0		SIZE A, CODE CP, NUMBER CMX1-0-2, REV. C
SCALE		
SHEET 1 OF 3		DIST.

DEC FORM NO. DRA 106

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
JUMPERS TO BE ADDED WHEN TWO (2) OR MORE AF01B's ARE USED IN THE SAME SYSTEM				
SDØ	A2S	D16T	JUMPERS	
SD1	A2U	D16V		
				AF01B #1
SDØ (Ø)	A2R	D12U		
SD1 (Ø)	A2T	D12V		
SDØ	A2S	D16T	JUMPERS	
SD1	A2U	D16V		
				AF01B #2
SDØ (Ø)	A2R	D12U		
SD1 (1)	A2U	D12V		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON	AF01B #1&#2
SCALE	
SHEET 2 OF 3	

DEC FORM NO. DRA 104

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
EXTERNAL COMPONENTS LIST

SIZE	CODE	NUMBER	REV.
A	CP	CMX1-Ø-2	C

DIST.

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
JUMPERS TO BE ADDED WHEN TWO (2) OR MORE AF01B's ARE USED IN THE SAME SYSTEM				
SDØ	A2S	D16T	JUMPERS	
SD1	A2U	D16V		AF01B #3
SDØ (1)	A2S	D12U		
SD1 (Ø)	A2T	D12V		
SD (Ø)	A2S	D16T	JUMPERS	
SD 1	A2U	D16V		AF01B #4
SDØ (1)	A2S	D12U		
SD1 (1)	A2U	D12V		

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REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON AFØ1B #3&#4	
SCALE	
SHEET 3 OF 3	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
EXTERNAL COMPONENTS LIST

SIZE	CODE	NUMBER	REV.
A	VCP	CMX1-Ø-2	C

DIST.

DEC FORM NO.
DRA 104

DRWG NO
K-WL-CMX1-0-3

REVLTR
B

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REV LTR	ECO NO	DATE	ENG
A	161	7-14-67	RAH
B	-195	1/17/68	RAH

REVISIONS

DRAWN J Lilie	DATE 1/23/67	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE A-D CONVERTER WIRE LIST
CHECKED [illegible]	DATE 1/22/67		FOR TAPE* FILE*
ENG R Blagojevich	DATE 4/14/67		
PROJ ENG [illegible]	DATE 4/14/67	ASSY NO -	SIZE K / CODE WL / DWG NO CMX1-0-3 / REV LTR B
PROD R Blagojevich	DATE 4/14/67	SCALE SHEET OF	DIST

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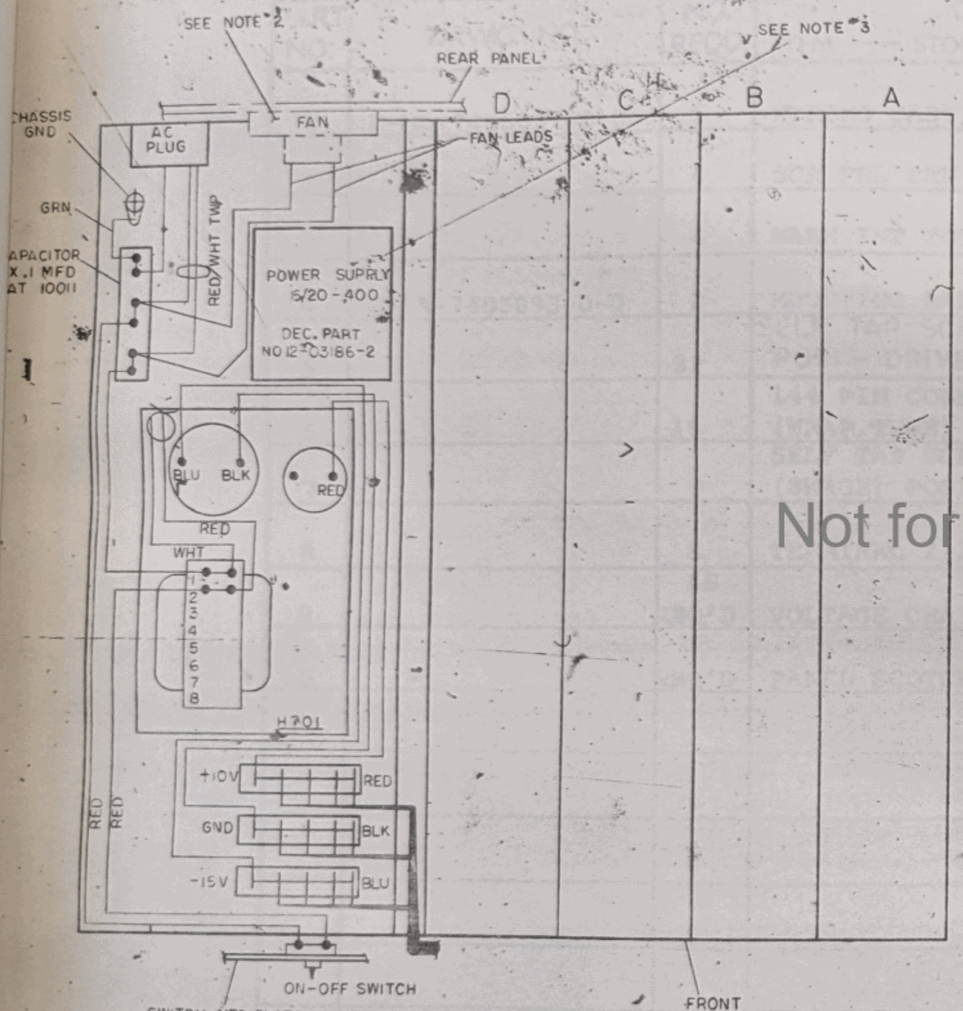
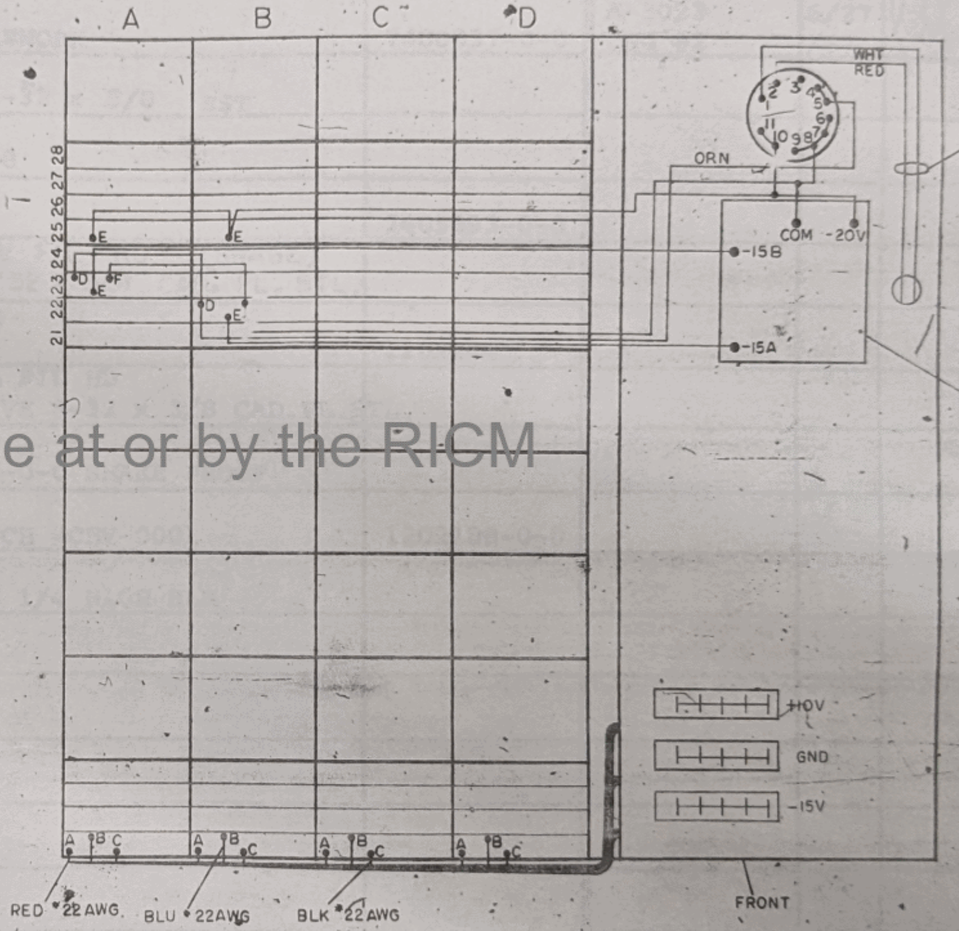
NOTES:
1. WIRE COLOR AS FOLLOWS:
   -15A & -15B = BLUE
   +20V = GREEN
   COM = BROWN
2. FAN IS ON TABLE TOP MODLES ONLY
3. FOR 240V INPUTS USE AN H701A AND DEC. PART NO. 12-03186-4



TOP VIEW
ALL WIRE TO BE #18 AWG TEF
UNLESS OTHERWISE SPECIFIED



BOTTOM VIEW
ALL WIRE TO BE #22 AWG TEF
UNLESS OTHERWISE SPECIFIED

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QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

DRN. [illegible] DATE 5-22-67
CHKD. E. Alyn DATE 5-23-67
ENG. E. Williams DATE 5-24-67
PROJ. ENG. [illegible] DATE 5-24-67
PROD. [illegible] DATE 5-24-67
FIRST USED ON

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
POWER WIRING
CMXI

SCALE NONE
SHEET 1 OF 1
SIZE D | CODE LC | NUMBER CMXI-0-5 | REV. A
DIST.

PARTS LIST

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PART NO.	DRWG. NO.	NO. REQD.	DESCRIPTION ITEM — STOCK SIZE — CAT. NO. — MFG.	DEC. STOCK NO.	REVISIONS CHANGE NO.	DATE	ENG.
1	E-MD-7406037-0-0	1	WIRING CASTING REWORK	7406037-0-0	A-3023 CHG #2	6/27 /67	
2		4	SCR PHL PAN HD 8-32 x 5/8 SST				
3		4	WASH INT TOOTH #8				
4	C-IA-7405893-0-0	2	MOUNTING BAR	7405893-0-0			
5		32	SELF TAP SCR PHL FIL HD (SWAGE) POSI-DRIVE 8/32 X 3/4 CAD. PL. STL.				
6		16	144 PIN CONN BLK (WRAP TYPE)	1202244			
7		8	SELF TAP SCR PHL FIL HD (SWAGE) POSI-DRIVE 8-32 x 3/8 CAD.PL.STL.				
8		8	TERMINAL 2116-08-0-0 SHAKE PROOF				
9		AS REQ'D	VOLTAGE CHAIN, PCH #CHV-0001	1202188-0-0			
10		REQ'D	PANEL SCOTCHCALS 1/4 HIGH BLK				

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MADE BY DOM FASOLI	DATE 5/12/67	TITLE WIRED ASSY CASTING	SIZE A	CODE PL	NUMBER 7005373-0-0	REV. A
CHECKED R.E. PHIPPS	DATE 5/19/67	FOR	ASSY. NO. D-AD-7005373-0-0		SHEET 1 OF 1	
ENG. R. Williams	DATE 5/24/67					

DEC FORM NO. DRA 109

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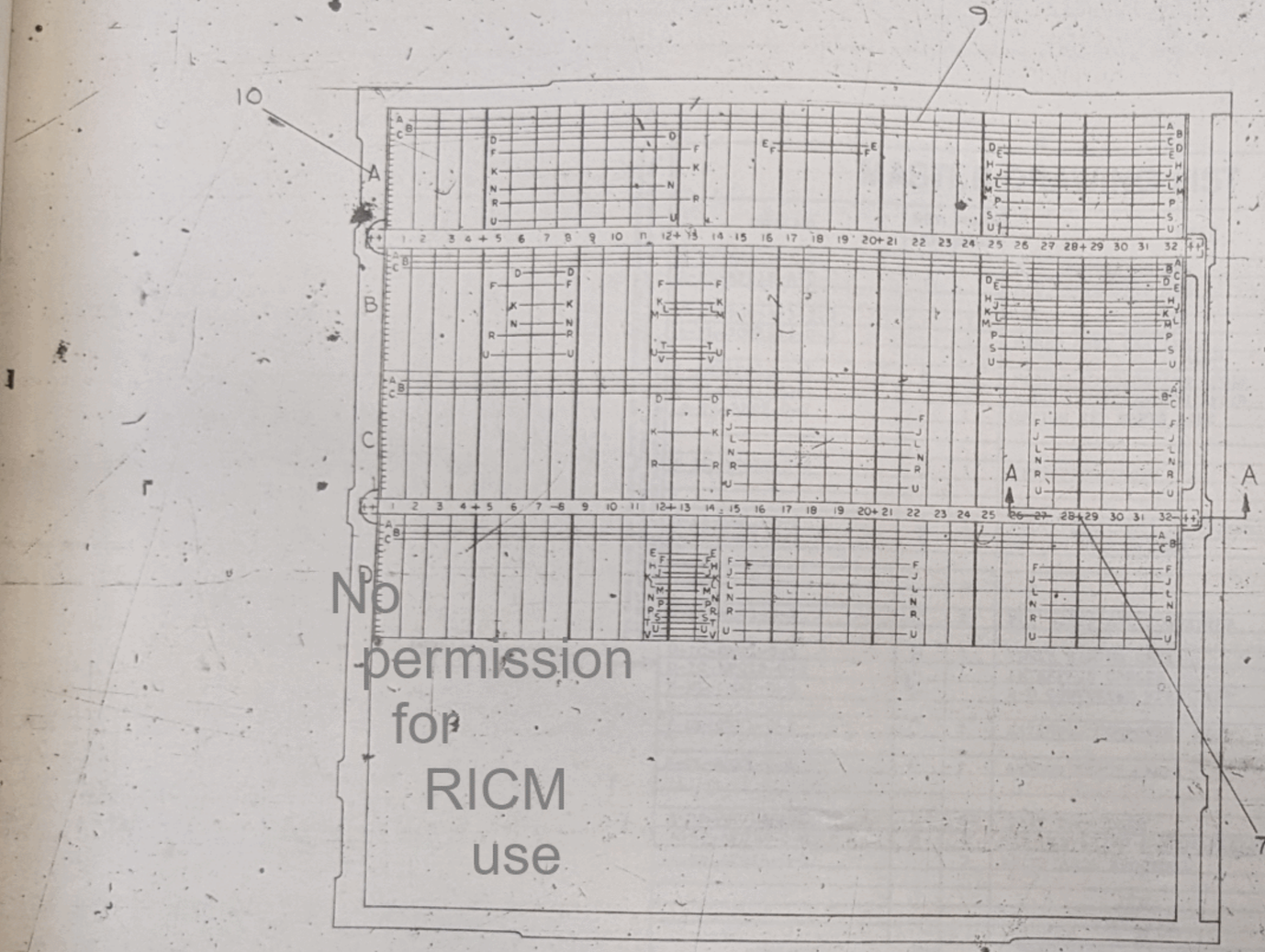

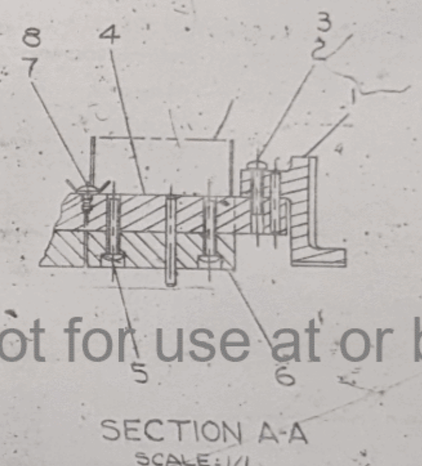

SECTION A-A
SCALE: 1/1

Not for use at or by the RICM

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

	NAME	DATE
DRN	Horst Franz	5-12-67
CHK'D	E. Hipps	5-12-67
ENG.	R. Williams	5-22-67
PROJ. ENG.	K. Blank	5-22-67
PROD.		

FIRST USED ON
E-UA-CMXI-A-0

SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
WIRED ASS'Y
CASTING

SIZE	CODE	NUMBER	REV.
D	AD	7005373-0-0	A

DIST.

NO.	REVISION	DATE	APP'D
A	ECO # 3028 CHG PART # IN SECTION A-A	5-12-67	
	ECO # 3048	5-22-67	
	FIRST USED ON WAS D-AD-7005490-0-0		

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-UA-AF01B-A-0			A-D CONVERSION SYS
A-PL-AF01B-A-0	A		A-D CONVERSION SYS
D-AD-7005373-0-0		1	WIRED ASSY CASTING
A-PL-7005373-0-0		1	WIRED ASSY CASTING
D-MU-AF01B-0-1	E	1	MODULE UTILIZATION AF01B
A-PL-AF01B-0-1	E	2	MODULE UTILIZATION AF01B
A-PL-AH02-0-2		1	OPTION KIT PARTS LIST
D-BS-AF01B-0-2	D	1	INTERFACE LOGIC
D-BS-AMX1-0-2	A	1	MULTIPLEX CONT. 64 CHANNEL
D-BS-AMX1-0-3	A	1	ANALOG MULTIPLEXER
D-BS-ADC1-0-2	C	2	FLIP-CHIP A-D CONVERTER
D-IC-CMX1-0-5	B	1	POWER WIRING CMX1
D-IC-AF01B-0-3	A	1	INTERFACE CABLES
K-WL-CMX1-0-3	C		A-D CONVERTER WIRE LIST
A-CP-CMX1-0-2	C	3	EXTERNAL COMPONENT LIST
A-CL-AMX1-0-4	A	8	ANALOG INPUT CABLE
A-SP-AF01B-A-0	B	6	TEST PROCEDURE
A-SP-AF01A-0-4	A	8	A/D CONVERTER & MULTIPLEXER AF01A & AF01B
A-SP-AF01A-0-9		2	ACCEPTANCE PROCEDURE

Not for use at or by the RICM

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	6/67	151	R.G.
B	7/67	161	R.G.
C	10/67	188	R.G.
D	10/67	189	R.G.
E	10/67	195	R.G.
F	11/67	203	R.G.
H	12/67	213	R.G.
J	1/68	224	R.A.
K	1/68	190	R.G.
L	3/68	211	D.B.
M	3/68	22	R.G.
N	3/68	216	R.G.
P	5/68	272	R.G.

DEC FORM NO. DRA 103

DRN.	J. LUBIN	DATE 2/67
CHK'D.	[illegible]	DATE 2/21/67
ENG.	[illegible]	DATE 5-5-67
PROJ. ENG.	[illegible]	DATE 5-5-67
PROD.	[illegible]	DATE 5-5-67

FIRST USED ON: D-UA-AF01B-A-0

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

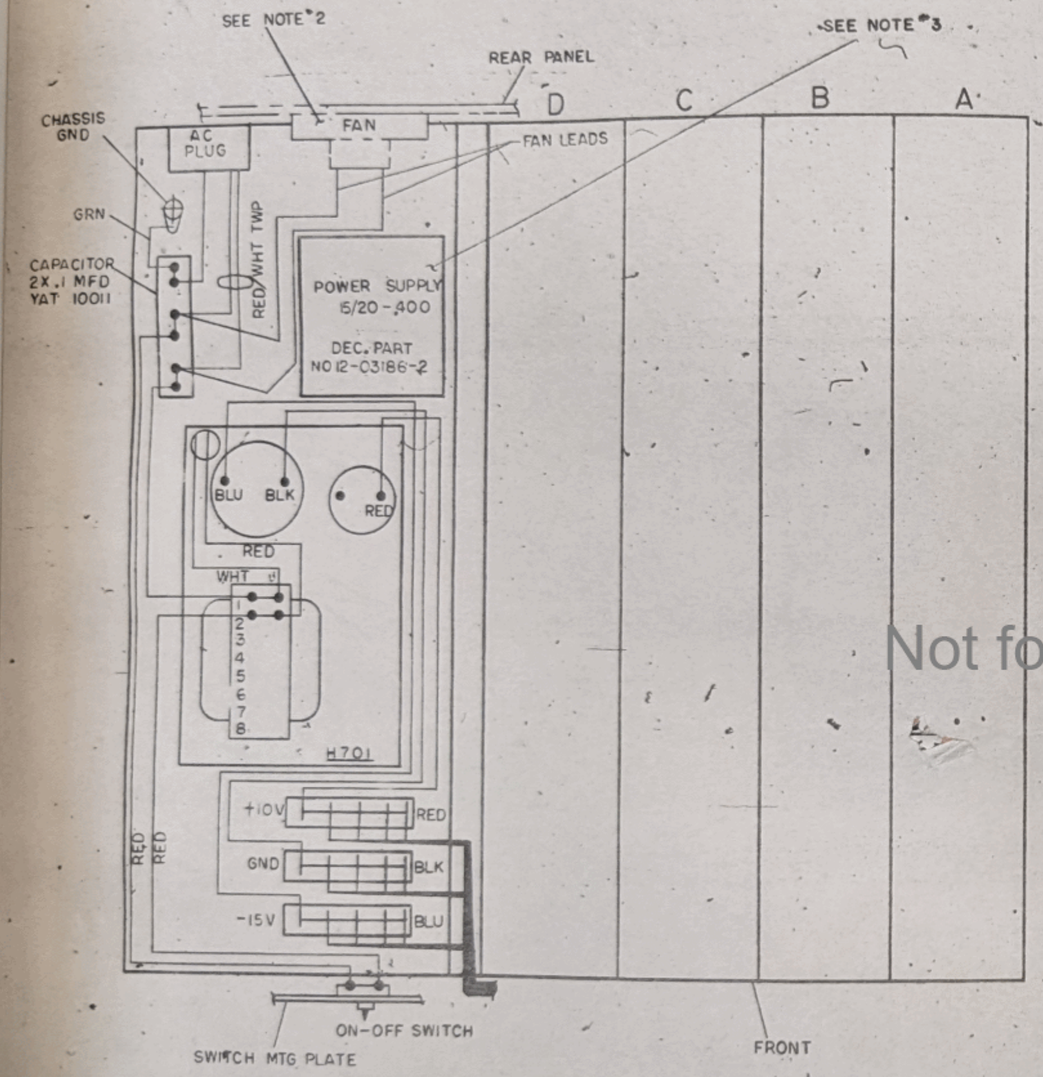
TITLE: A-D CONVERSION SYSTEM AF01B-A

SIZE	CODE	NUMBER	REV.
A	ML	AF01B-A-0	P

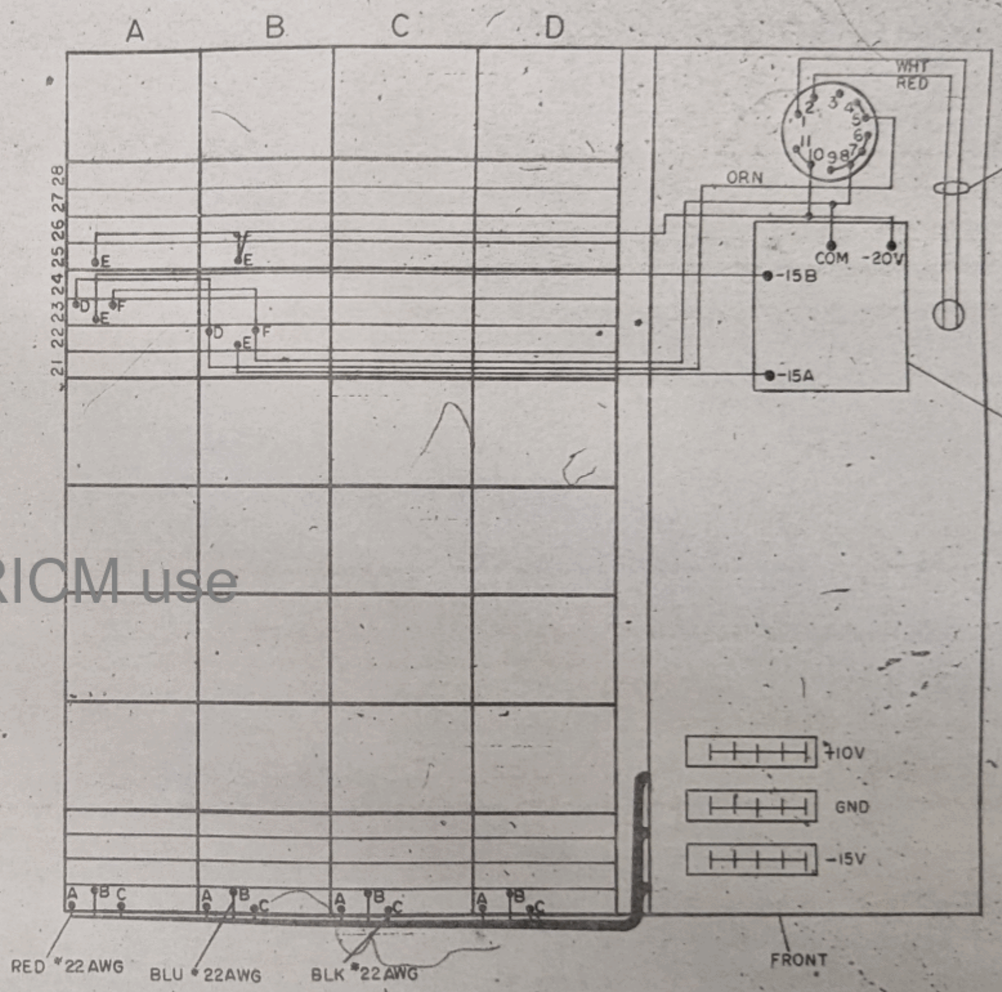
DIST.

Not for RICM use

NOTES:
1. WIRE COLOR AS FOLLOWS:
   -15A & -15B = BLUE
   -20V = GREEN
   COM = BROWN
2. FAN IS ON TABLE TOP MODLES ONLY
3 FOR 240V INPUTS, USE AN H701A AND DEC. PART NO. 12-03186-4
   LINE INPUTS TO H701A ARE 3,4
   ADD JUMPER FROM 2-8



TOP VIEW
ALL WIRE TO BE #18 AWG TEF
UNLESS OTHERWISE SPECIFIED



BOTTOM VIEW
ALL WIRE TO BE #22 AWG TEF
UNLESS OTHERWISE SPECIFIED

Not for RICM use

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL —
FINISH —

		DATE
DRN.		5-22-67
CHKD.		5-23-67
ENG.		5-24-67
PROJ. ENG.		5-24-67
MGR.		5-24-67

FIRST USED ON
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
POWER WIRING
CMXI

SIZE	CODE	NUMBER	REV.
D	IC	CMXI-0-5	B

DIST.

NO	ECO#	INITIALS	DATE
A	203	RB	2-23-67
B	272	RB	5-22-67

W.S.

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